

Serial No.: Pending (Continuation of 10/037,882)

**REMARKS**

The present application is a continuation of U.S. patent application serial number 10/037,882 ("parent application").

Claims 1-10, 12, 13, 16-25, 27, 28 and 31-34 remain in the application. By this amendment, claims 1 and 16 have been amended, claims 11, 14, 15, 26, 29 and 30 have been canceled, and new claims 31-34 have been added. The present application as originally filed supports these amendments. No new matter has been added.

Claims 11, 14, 15, 26, 29 and 30 have been canceled from the present application since these claims have been allowed in the parent application.

**Claim Rejections in Parent Application Based on Yamagishi et al.**

In the parent application, claims 1, 3-10, 12, 13, 16-24, 27 and 28 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0038669 to Yamagishi et al. The Yamagishi et al. publication published on April 4, 2002, was filed on September 28, 2001, and claims priority to Japanese patent application 2000-304840, filed October 4, 2000.

Applicant traverses this rejection and requests reconsideration and withdrawal of the rejection of claims 1, 3-10, 12, 13, 16-24, 27 and 28.

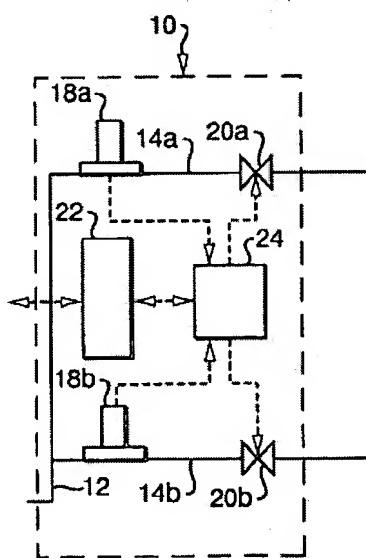
**Claims 1, 3-10, 12 and 13**

Independent claim 1, from which claims 3-10, 12 and 13 depend, recites a system for dividing a single mass flow into two or more secondary flows of desired ratios, including at least an inlet adapted to receive the single mass flow and at least two flow lines connected to the inlet. Each flow line includes a flow meter measuring flow through the flow line and a valve

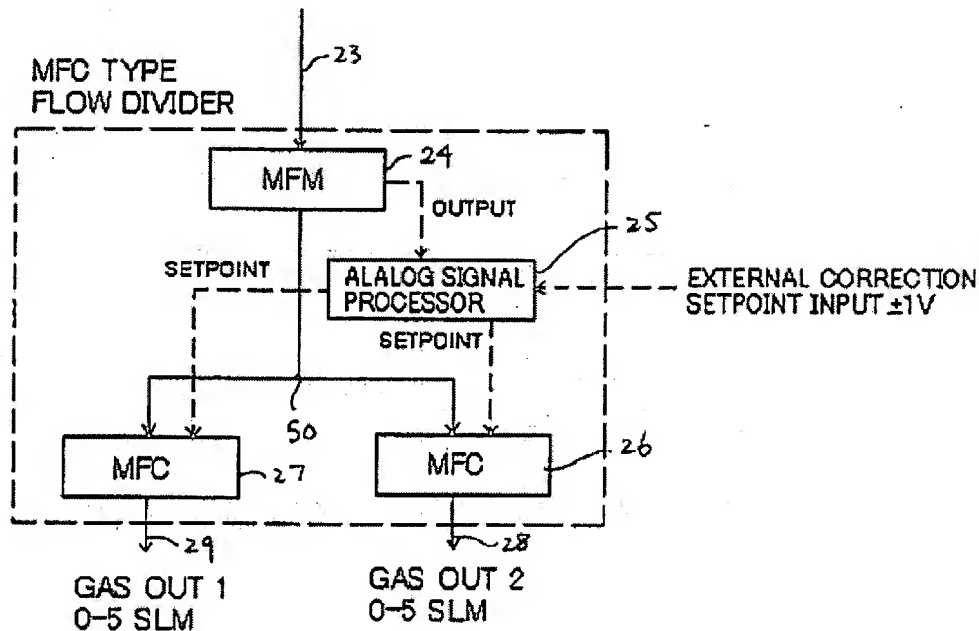
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controlling flow through the flow line. A controller is connected to the flow meters and the valves, and is programmed to calculate an actual ratio of flow through the flow lines based upon the measured flows, and calculate a desired flow through at least one of the flow lines if the actual ratio is unequal to a desired ratio. As currently amended, the actual ratio of flow through the flow lines is calculated without reference to a measured flow through the inlet. In other words, the system claimed does not include or require a mass flow meter (MFM) in the inlet.

Reproduced here for reference is a mass flow ratio system 10 from FIG. 1 of the present disclosure. The presently disclosed mass flow ratio system 10 includes an inlet line or manifold 12 for receiving the single gas flow from the outlet manifold 128 of the gas box 110, and first and second flow lines 14a, 14b connected to the inlet 12. Each line 14a, 14b is provided with a mass flow meter 18a, 18b measuring mass flow through the line and providing a signal indicative of the measured flow, and a valve 20a, 20b controlling flow through the line based on a signal indicative of a desired flow rate. The ratio system 10 also has a user interface 22 for receiving a desired flow ratio, and a controller 24 connected to the flow meters 18a, 18b, the valves 20a, 20b and the user interface 22. As shown, the system 10 does not include a mass flow meter (MFM) in the inlet 12.



Reproduced here for reference is the flow divider means from FIG. 2 of Yamagishi et al.



Applicant respectfully submits that Yamagishi et al. does not disclose or suggest a system as claimed in the present application. Instead Yamagishi et al. shows a flow divider means having a mass flow meter (MFM) 24 connected with an input port 23 on a primary side of the divider means, before a secondary side of the divider means having two output ports 28, 29. Each output port 28, 29 has a mass flow controller (MFC) 26, 27 (a mass flow controller generally includes a valve in addition to a MFM). A signal processor 25 is electrically connected between the MFM 24 and the MFCs 26, 27, and connected to a ratio setpoint input.

During operation, the MFM 24 detects the flow rate on the primary side and outputs an signal to the signal processor 25, which outputs a signal corresponding to one half of the primary side flow rate, to each MFC 26, 27. By using the MFM 24, the primary side flow rate is detected and a signal corresponding to one half of the flow rate is outputted to each MFC 26, 27, instantly

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balancing the flow rate therebetween at a maximum level.

Yamagishi et al., therefore, discloses a flow divider means having a mass flow meter (MFM) 24 on a primary side of the divider means. Yamagishi et al., however, does not disclose or suggest a system, as is claimed in independent claim 1 of the present application, that has an inlet and two flow lines connected to the inlet and a controller programmed to calculate an actual ratio of flow through the two flow lines based upon the flows measured in each flow line, and wherein the actual ratio is calculated without reference to a measured flow through the inlet (e.g., using a mass flow meter (MFM) on a primary side of the divider means).

Applicant, therefore, respectfully submits that independent claim 1 of the present application is neither anticipated by, nor rendered obvious in view of Yamagishi et al. for at least these reasons.

Since claims 3-10, 12 and 13 of the present application depend from independent claim 1, they include the limitations of the independent claim. As a result, the dependent claims also are not anticipated by, or rendered obvious in view of Yamagishi et al. for at least the above reasons, and for reciting further patentable limitations.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 3-10, 12 and 13 under 35 U.S.C. 102(e) as being anticipated by Yamagishi et al.

Since new claims 31 and 33 depend from independent claim 1, they are also allowable.

Claims 16-24, 27 and 28

Independent claim 16, from which claims 17-24, 27 and 28 depend, recites a method for dividing a single mass flow into two or more secondary mass flows of desired ratios. The method includes receiving a single mass flow into an inlet and dividing the single mass flow into

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at least two flow lines connected to the inlet, measuring mass flow through each of the flow lines, and calculating an actual ratio of mass flow through the flow lines based upon the measured flows. As currently amended, the actual ratio of mass flow through the flow lines is made without reference to a measured flow through the inlet.

As discussed above with respect to independent claim 1, Yamagishi et al. does not disclose or suggest a flow divider wherein the actual ratio of flow through two flow lines is calculated without reference to a measured flow through an inlet connected to the two flow lines (e.g., using a mass flow meter (MFM) on the inlet). Applicant, therefore, respectfully submits that independent claim 16 is neither anticipated by, nor rendered obvious in view of Yamagishi et al. for at least these reasons.

Since claims 17-24, 27 and 28 depend from independent claim 16, they include the limitations of the independent claim. As a result, the dependent claims also are not anticipated by, or rendered obvious in view of Yamagishi et al. for at least the above reasons, and for reciting further patentable limitations. Applicant, therefore, respectfully requests reconsideration and withdrawal of the rejection of claims 16-24, 27 and 28 under 35 U.S.C. 102(e) as being anticipated by Yamagishi et al.

Since new claims 32 and 34 depend from independent claim 16, they are also allowable.

**Claim Rejections Based on Yamagishi et al. in view of Goldman et al.**

In the parent application, claims 2 and 25 were rejected under 35 U.S.C. 103(2) as being unpatentable over Yamagishi et al. in view of U.S. Patent No. 4,369,031 to Goldman et al. The patent office submitted that Yamagishi et al. discloses all elements of claims 2 and 25 except for the use of thermal-based flow meters, but that Goldman et al. discloses the use of thermal-based flow meters.

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Claim 2 depends from independent claim 1 and claim 25 depends from independent claim 16. As discussed above, claims 1 and 16 are neither anticipated by, nor rendered obvious in view of Yamagishi et al. because Yamagishi et al. does not disclose or suggest a system or method including at least two flow lines wherein mass flow is measured through each flow line but is not measured through an inlet connected to the two flow lines.

Goldman et al. also does not disclose or suggest a system or method including at least two flow lines wherein mass flow is measured through each flow line but is not measured through an inlet connected to the two flow lines, as required by independent claims 1 and 16. Thus, the combination of Yamagishi et al. and Goldman et al. does not anticipate nor rendered obvious the subject matter of independent claims 1 and 16.

Since claims 1 and 25 depend from independent claims 1 and 16, they include the limitations of the independent claims. As a result, the dependent claims also are not rendered obvious over Yamagishi et al. in view of Goldman et al. for at least the above reasons, and for reciting further patentable limitations. Applicant, therefore, respectfully requests reconsideration and withdrawal of the rejection of claims 1 and 25 under 35 U.S.C. 102(e) as being unpatentable over Yamagishi et al. in view of Goldman et al.

### **Conclusion**

In view of the amendments and remarks submitted herein, applicant believes that all claims pending in the application are in condition for allowance and respectfully request such allowance. If a telephone conference will expedite prosecution of the application the Examiner is invited to telephone the undersigned.

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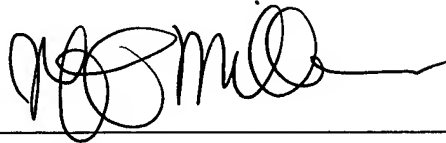
No fee is believed to be required; however, if a fee is required, or otherwise necessary to cover any deficiency in fees already paid, authorization is hereby given to charge our deposit account no. 50-1133.

Respectfully submitted,

McDermott, Will & Emery

Date: \_\_\_\_\_

4-1-04

A handwritten signature in dark ink, appearing to read "J. Miller", written over a horizontal line.

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